Chemical and Biological Analogues

Working Definition: “Anything biologically inspired, or a chemical outside of the traditional range (ZIFs, MOFs, etc.)”

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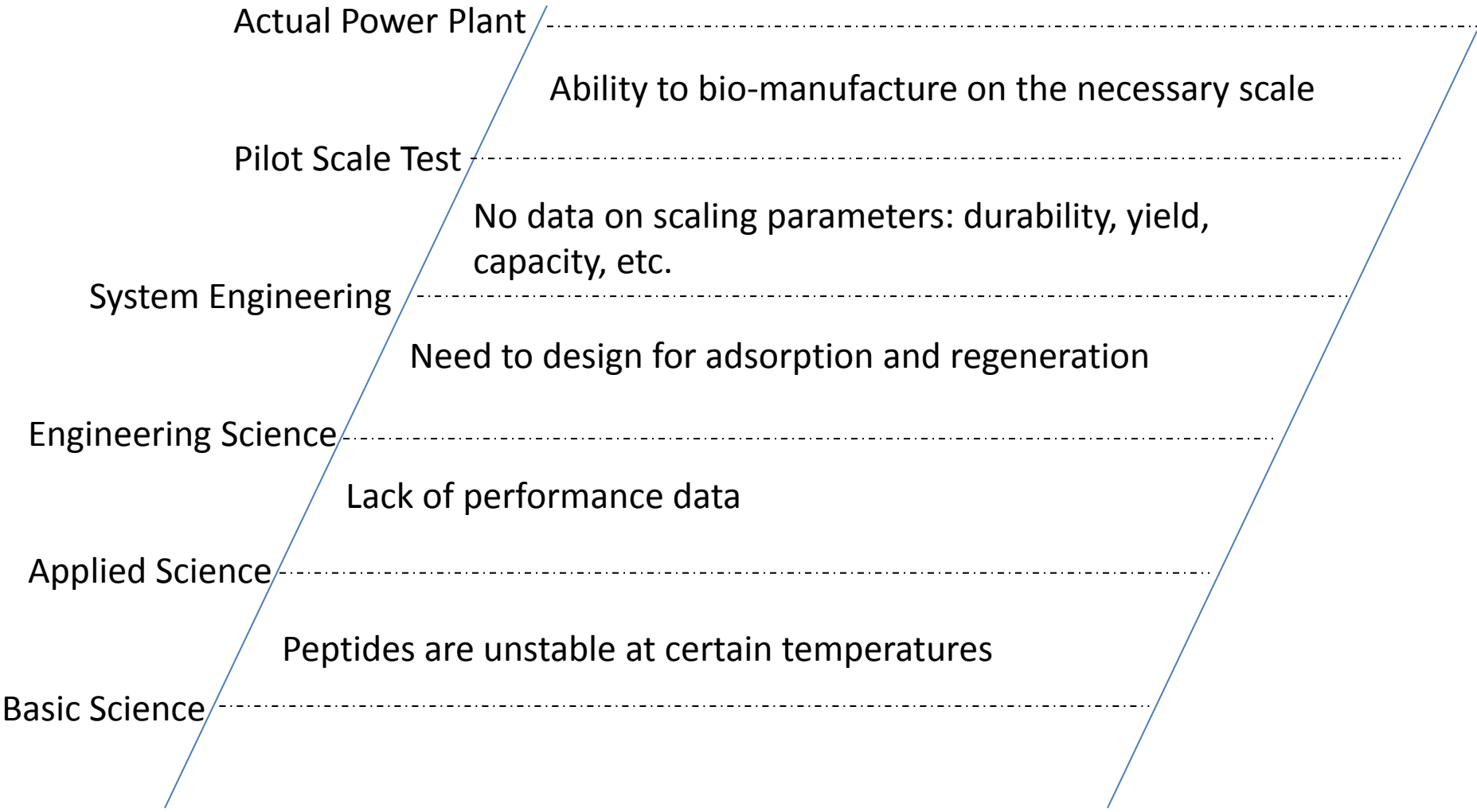
10/06/09

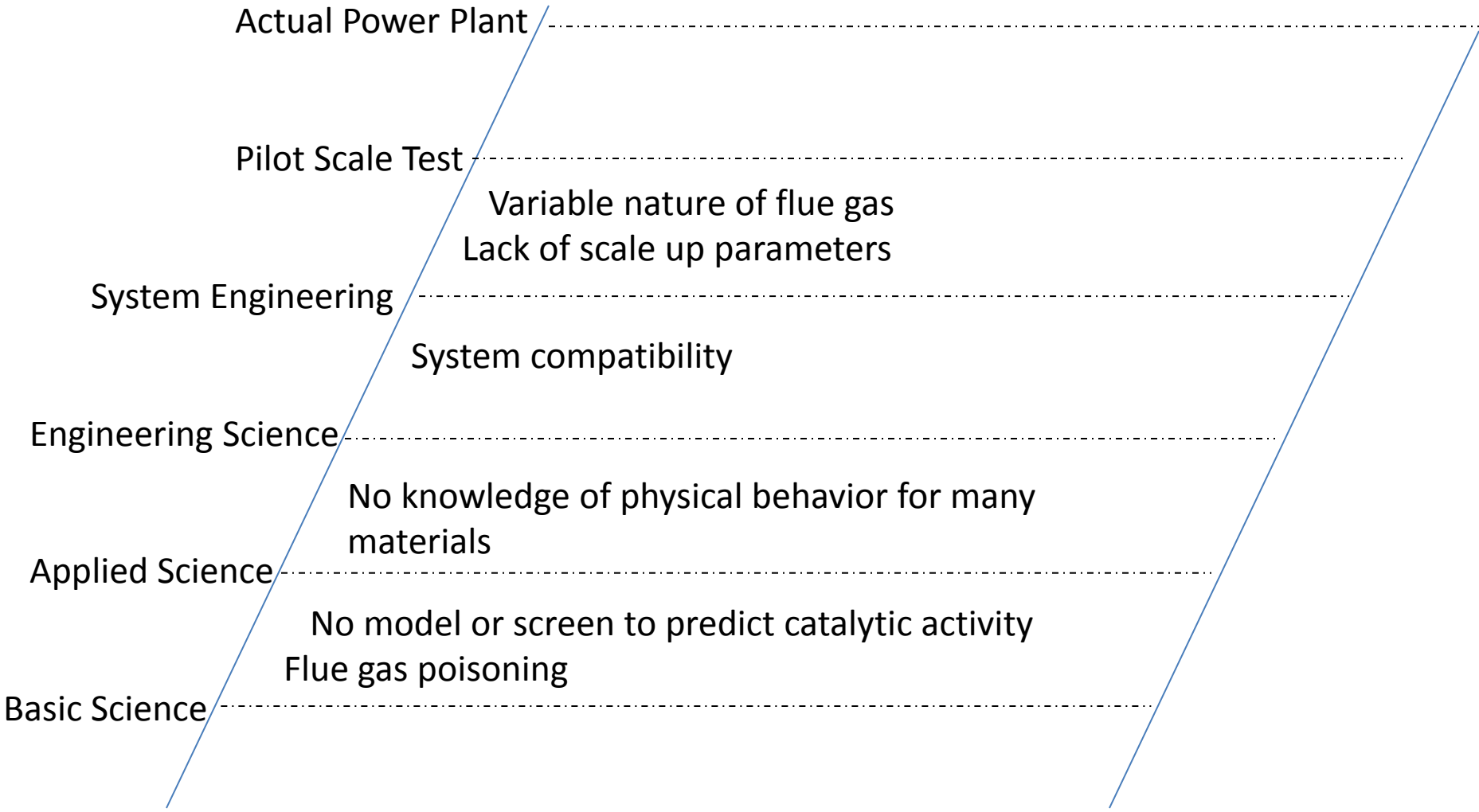
Amino Acids and Peptide Salts for CO_2 Removal

Stage of Development:
Applied Science



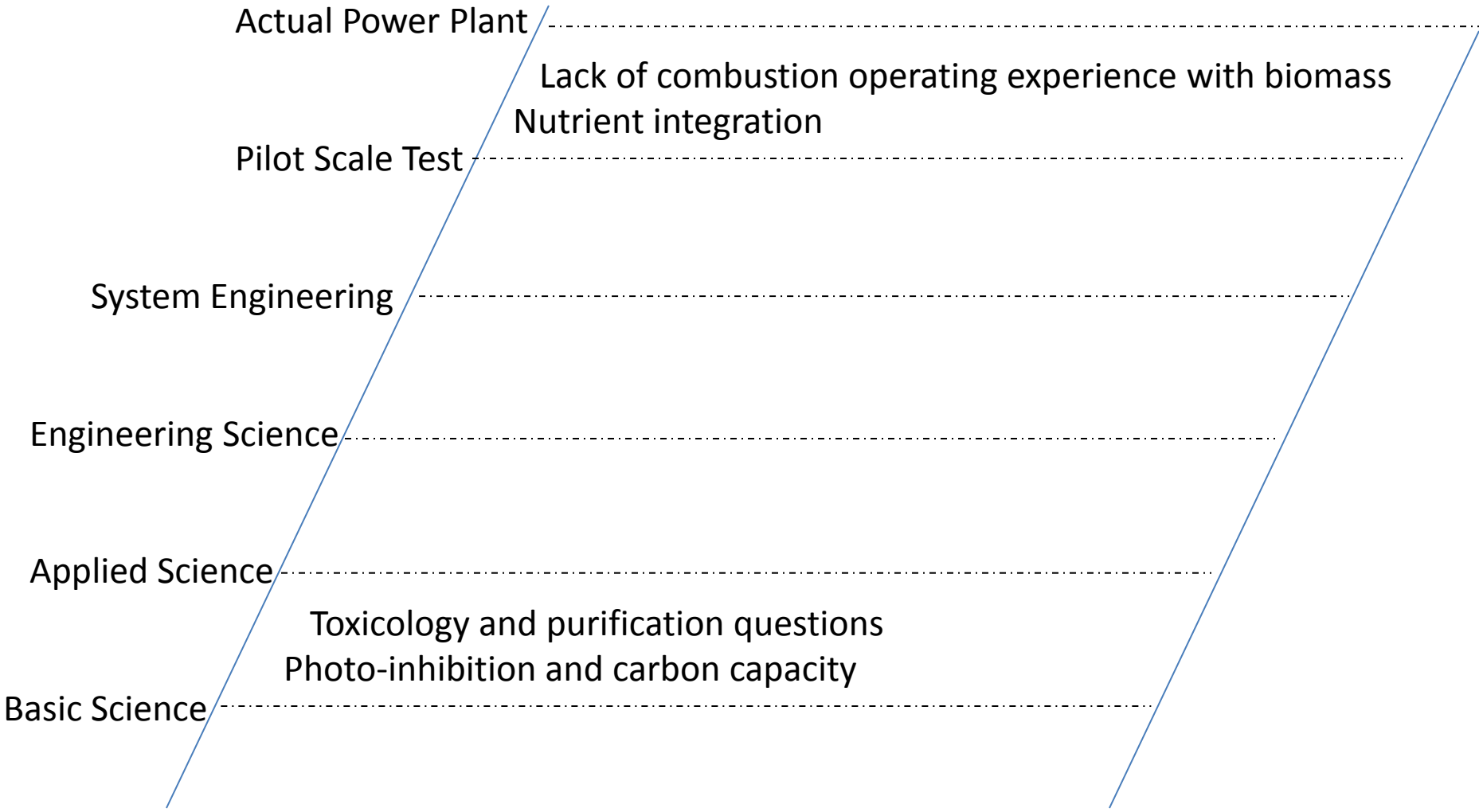
Carbonic Anhydrase Memetics

Stage of Development:
Basic Science



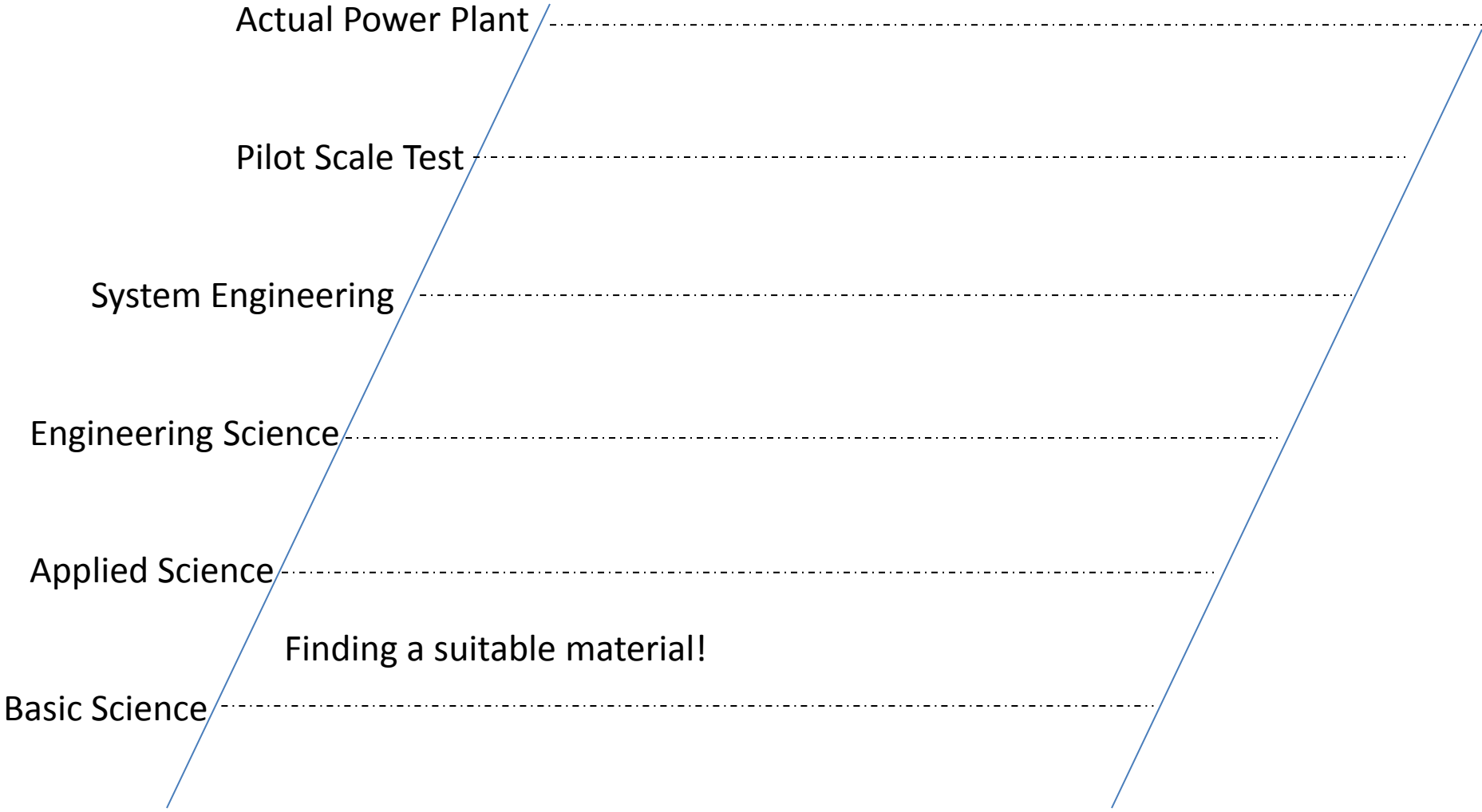
Algae for CO_2 Capture

Stage of Development:
Pilot Scale Test



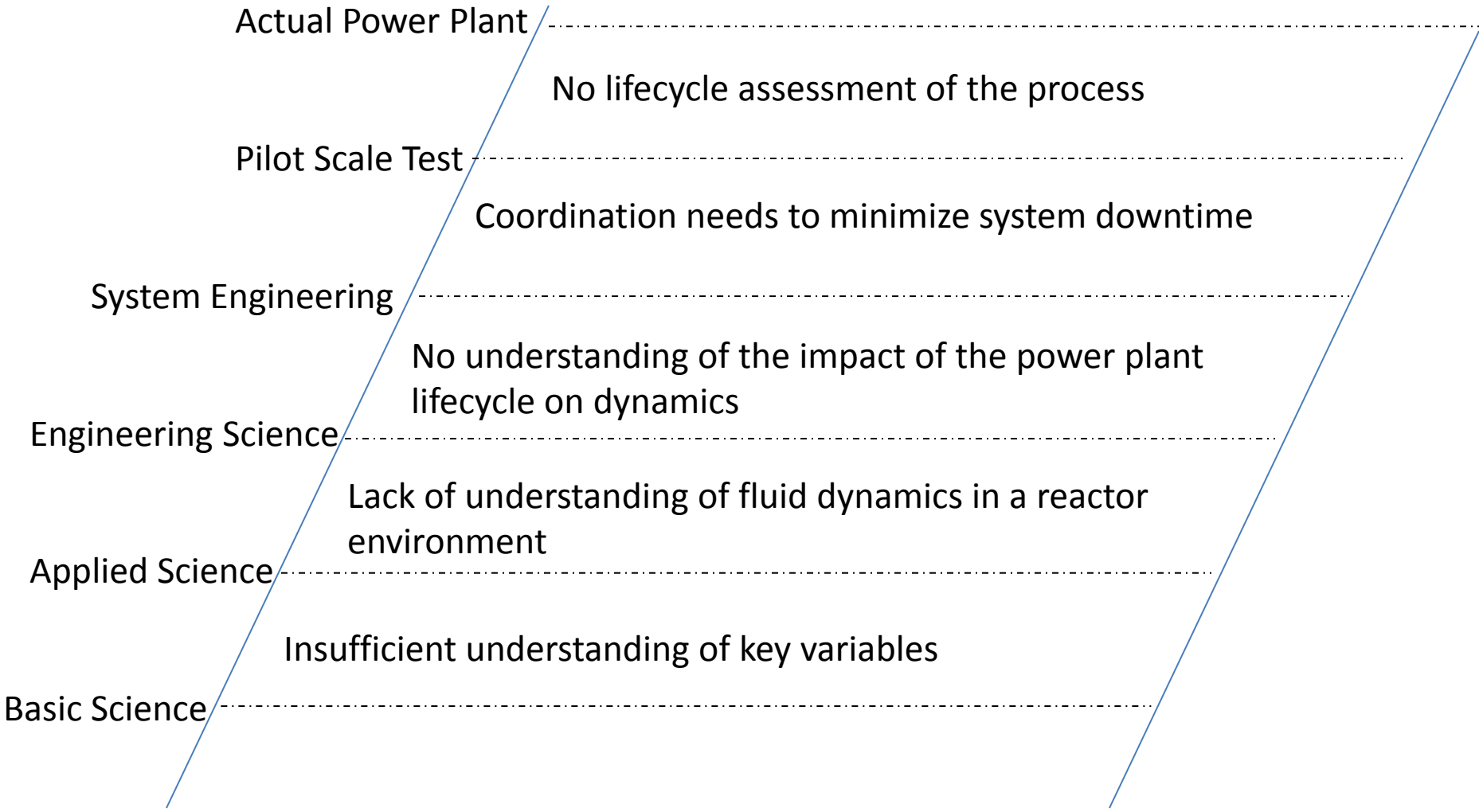
Develop a Biological Analogue for the Production of Oxygen on a Large Scale for Oxy-combustion

Stage of Development:
Basic Science



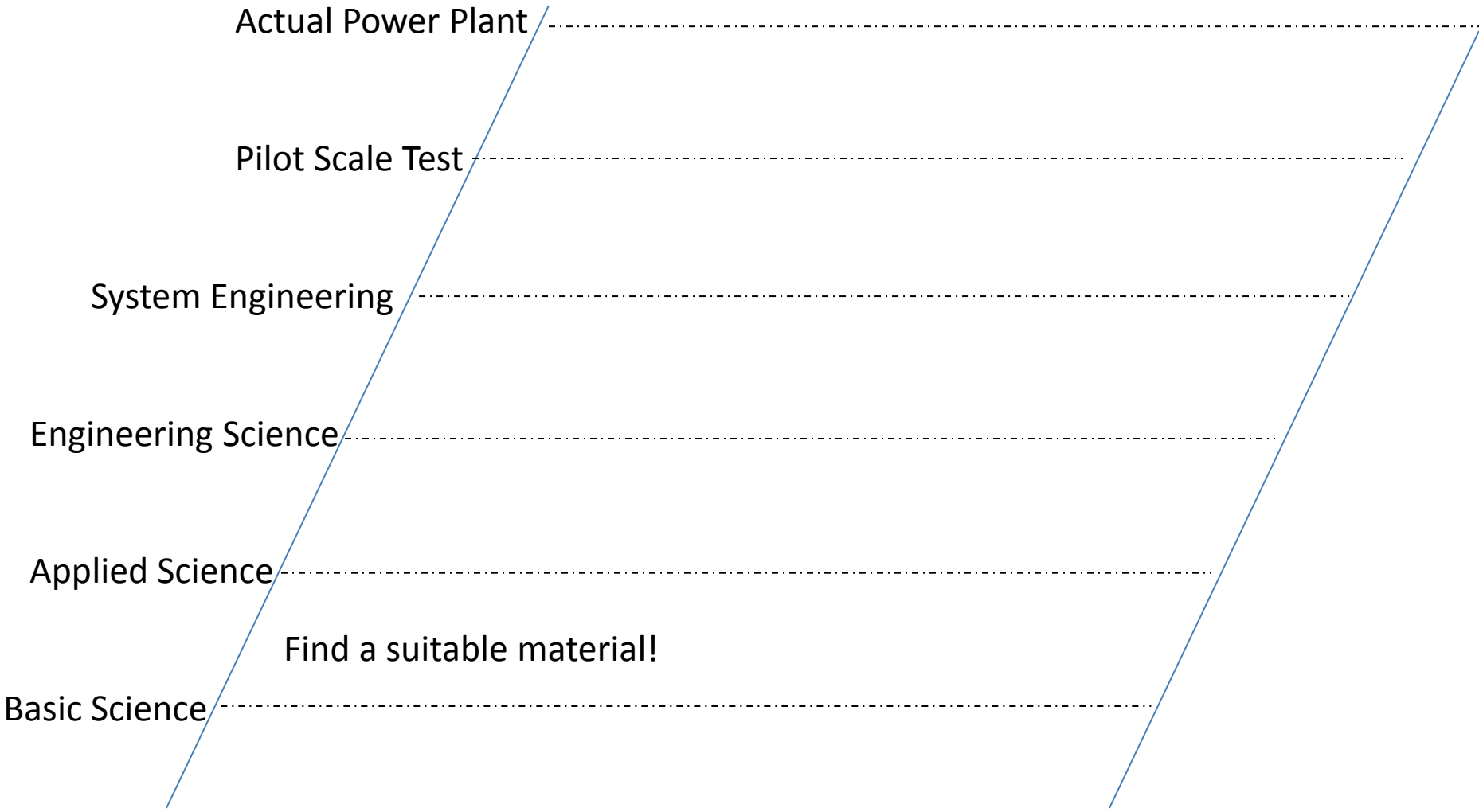
Process Steam Conversion of Flyash to Carbonation Materials

Stage of Development:
Basic Science



Develop Bio-Inspired Synthetic Catalysts to Capture CO_2

Stage of Development:
Basic Science

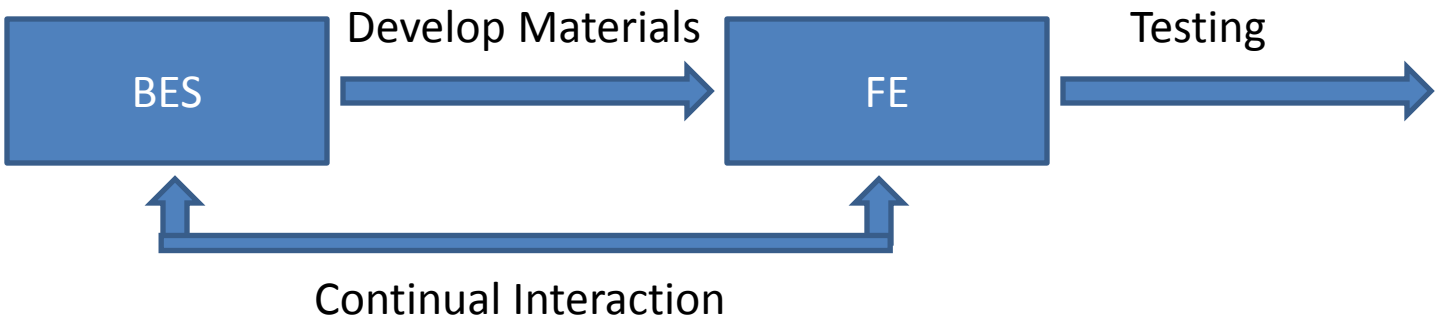


Common Themes

- Ideas toward the Basic Science side
  - Common tool requirements
- Benefits of predictive modeling
  - Discovery of entirely new materials
- Important processes occur at interfaces
- Communities which are not traditionally involved with energy
- Difficulties in scaling up
- Intellectual property

FE/BES Collaboration Opportunities

- Catalytic behavior
- Knowledge Transfer
- Tools to access and organize information
- Transition from micro- to macro-scale



Questions?